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EXAMINER	
JENNISON, BRIAN W	

ART UNIT	PAPER NUMBER
4184	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,193	LECHLER, GERHARD	
	Examiner	Art Unit	
	BRIAN JENNISON	4184	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/14/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the pneumatic cylinder of claims 11 and 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: WELDING DEVICE WITH SERVOMOTOR AND SPINDLES FOR DRIVING ELECTRODE ARMS.

3. The disclosure is objected to because of the following informalities: It is unclear what is meant by the term “slipping clutches” in line 32 of sheet 4. This term may have multiple meanings and can not be determined based on the information provided in the specification

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 9 recites the limitation "the electrodes (7, 13)" in line 5. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. The term "slipping clutches" in line 3 of claim 8 is a relative term which renders the claim indefinite. The term "slipping clutches" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term slipping clutch normally applies to something one would not want a clutch to do since; a slipping clutch normally means unwanted disengagement of the clutch during operation. A clutch also "slips together" with the part it is engaging when rotating. The term slipping clutch may also mean a continuous-drive clutch which "slips" once it achieves torque, instead of stopping.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-6, 9-10, 12-15, 17-18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinz et al (DE 101 44 731) as cited by applicant, in view of Marek et al (US 2003/0222055).

Heinz et al teaches:

Regarding Claim 1

A welding apparatus with two electrode carriers **(electrode arms 3a and 3b. See Fig 6 and Paragraph 0026, Lines 1-2)** which can be moved relative to one another by a drive unit **(electric motor 6 See Paragraph 0027, Lines 1-2)**, can be mounted with electrodes and together with the drive unit form an assembly which is mounted in a floating position on at least one linear guide (1) **(mounting plate 64, the electrode arms are mounted to the mounting plate which is connected to a cross bar to hold the electric motor and held in a base position. See Paragraph 0026, Line 5)** , characterized in that the assembly is held in a base position, the drive unit being formed by a servomotor (9), which can be used to drive two spindles (8, 14) **("electric motor 6, in particular a servomotor propelled spindle 7" See Paragraph 0027, Lines 1-2. The applicant states on sheet 2, line 4 of the specification amendment that there are 2 spindles driven by the servomotor in the arrangement described by Heinz et al.)** which are provided with opposing screw threads, are arranged parallel to the linear guide and engage with nuts assigned to the electrode carriers (6, 12). **(Fig 6 shows the spindles parallel to the linear guide. The screw threads must be opposing in Heinz et al since the electrode arms move towards each other in opposing directions. The ends of the spindles are assigned to knuckles 8a and 8b See Fig 6 and Paragraph 0027, Lines 3-4)**

Heinz et al fails to teach:

Regarding Claim 1: from which the electrode carriers (6, 12) can be transferred to the welding position, by means for compensating for its weight.

Regarding Claim 10, 18: The welding apparatus as claimed in claim 1, characterized in that the means for compensating for its weight are formed by at least one spring (21).

Marek et al teaches:

Regarding Claims 1, 10, 18: FIGS. 8a and 8b. Here, control pins 62 lie against a narrow end section 67 of control bar 61 and are drawn completely out of holes 65 in outer control webs 66 by the force of springs 63. **(In a welding device with a drive rod formed from a ball screw or roller screw spindle, the springs provide a pressure to compensate for the weight required to release the base and allow to arm to be moved for welding.)**

In view of Marek et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include, the springs as a means for weight compensations since, Marek et al teaches these springs for allowing the base, which is attached to a welding arm, to be released and moved for welding.

Heinz et al also teaches:

Regarding Claim 2: The welding apparatus as claimed in claim 1, characterized in that it is equipped with a brake (20), by which the assembly formed by the electrode carriers (6, 12) and the servomotor (9) can be locked on the linear guide (1).
(Fig 6, shows a fulcrum 2, a horizontal bar and transformer 9 which form a locking mechanism for locking the servomotor 6 on the linear guide formed by plate 64. The servomotor will not move since it is secured by these devices)

Regarding Claims 3 and 13: The welding apparatus as claimed in claim 2, characterized in that three carriages (2, 3, 4) are mounted on the linear guide (1).
(Fig 6 shows the two plier arms 69 and the horizontal bar connected to servomotor 6 mounted on a linear guide formed by plate 64)

Regarding Claims 6, 14-15: The welding apparatus as claimed in claim 1, characterized in that the servomotor (9) is arranged between the electrode carriers (6, 12). **(Fig 6 shows the servomotor 6, arranged between the electrode arms 3a, 3b)**

Regarding Claim 9, 17: The welding apparatus as claimed in claim 1, characterized in that the spindles (8, 14), which can be driven by the servomotor (9), engage with nuts at those ends of the electrode carriers (8, 12) which are remote from the electrodes (7, 13). **(Fig 6 shows the spindles 7, driven by servomotor 6 and engage with knuckles 8a and 8b, being remote from the electrodes 4a, 4b. The applicant states, on sheet 2, line 3-6 this device by Heinz is arranged in this manner.)**

Regarding Claim 12, 20: the welding apparatus as claimed in claim 1, characterized in that the linear guide (1) is provided with end stops (22, 23).
(Fig 6 shows the spindles 7, driven by servomotor 6 and engage with knuckles 8a and 8b. The knuckles along with electrode arms 69 act as an end stop prevent the spindles from rotating out of the knuckles.)

Heinz et al fails to teach:

Regarding Claim 4: The welding apparatus as claimed in claim 3, characterized in that the carriage (3) connected to the servomotor (9) can be locked by the brake (20).

Regarding Claim 5: The welding apparatus as claimed in claim 4, characterized in that a brake rail (18), which can be locked by a piston (19) of the brake (20), is connected to the carriage (3) carrying the servomotor (9).

Marek et al also teaches:
Regarding Claims 4 and 5: The locking mechanism in Fig 8a in which rods 62 function as pistons hold control bar 61 which acts as a brake rail is connected to base 50 which is connected to the control arm 22" which carries the servomotor 31. **(See Paragraph 0037, Lines 7-10)**

In view of Marek et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include, the brake or locking mechanism locked by a piston, since Marek et al teaches the pistons for locking control bar and unlocking the bar to allow movement of the electrode arms for welding.

11. Claims 7-8, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinz et al as modified by Marek et al as applied to claims 1- 2 above, and further in view of Nakamura et al (6,339,203).

The teachings of Heinz et al as modified by Marek et al have been discussed above.

Heinz et al as modified by Marek et al fails to teach:

Regarding Claims 7, 16: the welding apparatus as claimed in claim 1, characterized in that the spindles (8, 14) are connected, via clutches (10, 15), to opposite shaft stubs (11, 16) of the shaft of the servomotor (9).

Regarding Claim 8: The welding apparatus as claimed in claim 7, characterized in that the clutches (10, 15) are designed as slipping clutches.

Nakamura et al teaches:

Regarding Claims 7, 16: A servomotor 51 which is connected to spindle 1A by clutch 57, for engaging the spindle, with stubs shown in Fig 5. just below the clutch 57. **(See Column 3, Lines 23-31)**

Regarding Claim 8: Since the servomotor 51 spins the clutch 57, the clutch will "slip together" with the spindle when it engages. This is the normal way in which a clutch operates.

In view of Nakamura et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Heinz et al as modified by Marek et al, the slipping clutch which connects to the servomotor via shaft stubs since, Nakamura et al teaches the spindle connected to the servomotor by a clutch for controlling the servomotor and engaging with the spindle.

12. Claims 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heinz et al as modified by Marek et al as applied to claims 1-2 above, and further in view of Taniguchi et al (US 6,337,456).

The teachings of Heinz et al as modified by Marek et al have been discussed above.

Heinz et al as modified by Marek et al fails to teach:

Regarding Claims 11 and 19: The welding apparatus as claimed in claim 1, characterized in that the means for compensating for its weight are formed by a pneumatic cylinder.

Taniguchi et al teaches:

Regarding Claims 11 and 19: "while the piston rod 21 of the balancing cylinder 20 is connected to the housings 22a and 22b; and thus, due to an air pressure circuit capable of obtaining the weight balance effect of the gun main body with respect to the balancing cylinder 20, the whole of the welding gun can be floated so as to be able to absorb a reaction force generated when a movable-side electrode tip gives pressure to two works, thereby being able to prevent the works against deformation and strain." **(See Column 8, Lines 10-16)**

In view of Taniguchi et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Heinz et al as modified by Marek et al, the piston as a means for compensating for its weight since, Taniguchi et al teaches a piston rod in a cylinder with an air pressure circuit for floating the welding gun to absorb a reaction force to prevent against deformation and strain.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sakai (US 5,510,593) teaches an apparatus for welding in which the welding arm is moved by a threaded rod.

Kato et al (US 6,236,011) teaches an apparatus for spot welding with a servo motor which turns a spindle to control welding arms.

Tijs (US 4,572,940) teaches a welding device with a spring for compensating for the weight of the device during welding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 7:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 571-272-2391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/
Examiner, Art Unit 4184

/ISAM ALSOMIRI/
Primary Examiner, Art Unit 3662

12/5/2008